

US EPA ARCHIVE DOCUMENT



Essential Fish Habitat Assessment

Baytown Olefins Plant Ethylene Expansion Unit Project Harris County, Texas

Prepared for

**ExxonMobil Chemical Company
Baytown Olefins Plant**

Prepared by

Whitenton Group, Inc.

May 2013



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WGI Project No. 1334

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TABLE OF CONTENTS

TABLE OF CONTENTS	ii
ACRONYMS.....	iii
1.0 INTRODUCTION	1
2.0 PROJECT DESCRIPTION	2
2.1 PROJECT PURPOSE AND LOCATION	2
2.2 CONSTRUCTION INFORMATION.....	2
2.3 MARINE VESSEL TRAFFIC	3
2.4 STORMWATER	4
2.5 WASTEWATER	4
3.0 BACKGROUND INFORMATION	5
3.1 GENERAL ENVIRONMENTAL INFORMATION	5
3.1.1 REGIONAL ENVIRONMENTAL INFORMATION	5
3.1.2 WATER RESOURCES.....	6
4.0 AIR QUALITY ANALYSIS RESULTS.....	7
5.0 EFFECTS OF THE PROPOSED ACTION ON EFH	9
5.1 EFH	9
5.2 HABITAT AREAS OF PARTICULAR CONCERN.....	10
5.3 POTENTIAL LAND-BASED EFFECTS ON EFH.....	10
5.4 POTENTIAL EFFECTS ON EFH THROUGH DEPOSITION OF AIR POLLUTANTS.....	10
5.5 POTENTIAL EFFECTS OF STORM WATER EFFLUENT WITHIN EFH	11
5.6 POTENTIAL EFFECTS OF INCREASED WASTEWATER EFFLUENT WITHIN EFH.....	11
5.7 POTENTIAL EFFECTS OF INCREASED MARINE VESSEL TRAFFIC WITHIN EFH	15
6.0 CONCLUSIONS.....	16
7.0 REFERENCES.....	17
APPENDIX A	FIGURES
APPENDIX B	PHOTOGRAPHIC LOG
APPENDIX C	TABLE 1(a)

ACRONYMS

AOI	Area of Significant Impact
BOP	Baytown Olefins Plant
BTRF	Baytown Refinery
CO	Carbon Monoxide
EFH	Essential Fish Habitat
EFHA	Essential Fish Habitat Assessment
EPA	Environmental Protection Agency
ESL	Effects Screening Levels
EM	ExxonMobil
FMC	Fishery Management Council
FMP	Fishery Management Plan
GHG	Greenhouse Gas
GLCMax	maximum predicted ground level concentration
HSC	Houston Ship Channel
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MGD	Million Gallons per Day
MSS	Maintenance, Startup, and Shutdown
NAAQS	National Ambient Air Quality Standards
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NSR	New Source Review
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM	Particulate Matter
PSD	Prevention of Significant Deterioration
Sage	Sage Environmental Consulting, LP
SIL	Significant Impact Level
SO ₂	Sulfur Dioxide
SWPPP	Storm Water Pollution Prevention Plan
TCEQ	Texas Commission on Environmental Quality
TPDES	Texas Pollutant Discharge Elimination System
US	United States
VOC	Volatile Organic Compound
WGI	Whitenton Group, Inc.
µg/m ³	microgram per cubic meter

1.0 INTRODUCTION

The ExxonMobil Chemical Company Baytown Complex is one of the largest integrated advanced petroleum and petrochemical complexes in the world. It consists of the Baytown Refinery (BTRF), Baytown Chemical Plant, and Baytown Olefins Plant (BOP). The BOP produces 6 billion pounds of ethylene, propylene, and butadiene¹. ExxonMobil (EM) proposes to expand the BOP to include a new ethylene production unit. The new facility will process ethane to produce ethylene and other products.

The proposed Project Area (limits of earth disturbance) is located within the BOP property boundary, approximately 0.10 miles west of SH 330 and 0.75 miles north of Park Street in the City of Baytown, Harris County, Texas (Figures 1 and 2 – Appendix A). This project is a major source for greenhouse gases (GHG) and is subject to federal Prevention of Significant Deterioration (PSD) GHG permitting. The United States (US) Environmental Protection Agency (EPA) is responsible for issuing GHG PSD permits in Texas. This project is also subject to New Source Review (NSR) permitting. The Texas Commission on Environmental Quality (TCEQ) is responsible for issuing NSR permits in Texas.

The 1996 Essential Fish Habitat (EFH) amendments to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) set forth a mandate for the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS), regional fishery management councils (FMC), and other federal agencies to identify and protect important marine and anadromous fish habitat. EFH is defined in the Magnuson-Stevens Act as "...those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity²." A generic Fishery Management Plan (FMP) amendment delineating EFH for species managed by the Gulf of Mexico FMC was approved in early 1999. The generic FMP subsequently was updated and revised in 2005 and became effective in January 2006³.

In addition, EFH for highly migratory species managed by the NMFS was identified in two Secretarial FMPs. The consultation requirements in the Magnuson-Stevens Act direct federal agencies to consult with NMFS when any of their activities may have an adverse effect on EFH. The Magnuson-Stevens Act defines "adverse effect," in part, as "any impact that reduces quality and/or quantity of EFH." This definition also provides that "adverse effect" may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in

species’ fecundity), site-specific or habitat wide effects, including individual, cumulative, or synergistic consequences of actions².”

Whitenton Group, Inc. (WGI), EM’s EFH consultant for the project, has prepared this EFH Assessment (EFHA) to report the results of the critical review of the proposed Baytown Olefin Plant Expansion project’s potential for direct, indirect, and cumulative adverse effects on federally-managed EFH.

2.0 PROJECT DESCRIPTION

2.1 PROJECT PURPOSE AND LOCATION

EM proposes to expand the BOP to include a new ethylene production unit, specifically eight new steam cracking furnaces and recovery equipment. The new facility will process ethane to produce ethylene and other products.

The proposed Project Area is located within the EM BOP property boundary, approximately 0.10 miles west of SH 330 and 0.75 miles north of Park Drive in the City of Baytown, Harris County, Texas (Figure 1 – Appendix A). This project is a major source for GHG and is subject to federal PSD GHG permitting. The EPA is responsible for issuing GHG PSD permits in Texas. This project is also subject to NSR permitting. The TCEQ is responsible for issuing NSR permits in Texas.

Project location information:

USGS Quad	Latitude/Longitude
Highlands	29.758460, -95.007083

2.2 CONSTRUCTION INFORMATION

Construction of the proposed expansion project will take place within the existing BOP property boundary. The purpose of the project is to expand the existing BOP by adding 8 new steam cracking furnaces and recovery equipment⁴. The major pieces of recovery equipment include a quench tower, caustic wash facilities, a process gas compressor and interstage coolers, a chiller train, a refrigeration system, a deethanizer, an ethylene/ethane (C2) splitter, and a

demethanizer. In addition, a new cooling tower and a new flare system will be constructed and Outfall 002 will be relocated. Existing utilities including firewater, industrial water, domestic water, boiler feedwater, plant air, hydrogen, electricity, and marginal steam product may be utilized.

The civil construction (areas of earth disturbance) activities are outlined below. The areas of earth disturbance, referred to as the "Project Area," total approximately 26.3 acres. Of the 26.3 acres, approximately 16.6 acres has historically been developed or disturbed. The remaining 9.7 acres is currently undeveloped. The Project Area is shown in Figure 2 (Appendix A).

The projected construction start date is the third quarter of 2013 (3Q13). The projected operation start date is the second quarter of 2016 (2Q16). Construction activities will be limited to the Project Area within the existing property boundaries. The total time estimated to complete the project is 12 quarters and includes the following list of general construction activities.

- Site preparation: dismantling, land clearing, equipment, installation of temporary facilities (i.e., roads, offices, parking lots, laydown yards, and utilities), and installation of permanent facilities (i.e., fencing and paving)
- Installation of eight new steam cracking furnaces
- Installation of recovery equipment (quench tower, caustic wash facilities, process gas compressor and interstage coolers, chiller train, refrigeration system, deethanizer, ethylene/ethane (C₂) splitter, and demethanizer)
- Installation of new pipe
- Installation of new cooling tower and flare system

The project is expected to create about 350 full-time jobs and about 10,000 temporary construction jobs⁴.

2.3 MARINE VESSEL TRAFFIC

The Houston Ship Channel (HSC) is a 45-foot deep channel that extends from the Gulf of Mexico north through Galveston Bay, the San Jacinto River, and Main Turning Basin at Houston, TX (approximately 54 miles). The HSC is highly utilized by commercial, residential and industrial traffic including oil tankers and barges, private fishing boats and recreational vessels⁵. Operation of the proposed BOP Expansion project would not result in an increase in vessel traffic within the HSC.

2.4 STORM WATER

Erosion and sedimentation controls will be utilized to protect water quality during the construction and operation of the proposed project, in accordance with Section 401 of the Clean Water Act and 30 Texas Administrative Code Chapter 279 and as prescribed in the Storm Water Pollution Prevention Plan (SWPPP) required for construction.

All storm water runoff from construction of the expansion project will be managed in the same storm water system that will be used to manage the Post First Flush (non-contact) storm water once the unit is built. This non-contact storm water will be discharged through Outfall 002 under the BOP's Texas Pollutant Discharge Elimination System (TPDES) Individual Permit No. WQ0002184000. The flow path of Outfall 002 is to an unnamed open ditch system (earthen and concrete lined), to Goose Creek, and to Tabbs Bay (Figure 2 – Appendix A).

Non-contact storm water is collected in a ditch system called the Nonprocess Area Storm Water Collection System during construction and operation. The main ditch leading to the Nonprocess Area Storm Water Collection System has manually operated valves that are kept closed. Prior to discharge, the water is visually inspected to ascertain if it is acceptable for discharge. Water that does not pass inspection is pumped to the BOP Retention Basin directly or via the Contaminated Sewer System. Per the TPDES permit, discharge from the outfall is sampled and monitored.

An Oil and Hazardous Materials Spill Prevention, Control, and Countermeasure Plan will be used during construction of the expansion project.

2.5 WASTEWATER

There will be no changes to the existing water system due to the addition of the ethylene production unit to the existing BOP. The proposed expansion project's wastewater system will consist of a process water stripper system, wastewater equalization tank, and storm water first flush system. Process wastewater will be treated in the process water stripper and then sent to the BTRF for further treatment and discharge (TPDES Individual Permit No. WQ0000592000). During certain conditions, including start-up and shutdown, the process wastewater may be routed to the equalization tank and then to the BOP base plant process wastewater line. Cooling tower blowdown will be routed to the BTRF.

Treated wastewater from the BTRF is released through the existing Outfall 001 (TPDES Individual Permit No. WQ0000592000), which discharges into the HSC (San Jacinto Tidal) adjacent to the Fred Hartman Bridge (Figure 2 – Appendix A). Other wastewaters, such as drinking water and safety shower flushing, fire water flushing, steam condensate, and exchanger back flush, may be discharged via Outfall 002 (TPDES Individual Permit No WQ0002184000) into Goose Creek (non-tidal at discharge location).

It is estimated that there will be a net 8% decrease from 21.3 million gallons per day (MGD) to 19.6 MGD of discharged wastewater at Outfall 001 as a result of the proposed expansion project. The expansion project's wastewater effluent discharge will be an estimated 1.1 MGD. This proposed increase will be offset by rerouting an existing 2.8 MGD of demineralizer plant regenerate water to another existing outfall with existing TPDES authorization. The demineralizer plant regenerate water is not associated with the proposed expansion project. The effluent discharge at Outfall 001 will not exceed the permitted daily maximum flow rate of 60 MGD or the average monthly flow rate of 33 MGD. Photographs of Outfall 001 are provided in Appendix B.

The proposed project wastewater effluent is not expected to be significantly or demonstrably different (i.e., temperature or pollutant concentrations) than wastewater currently generated by operations at the BOP.

3.0 BACKGROUND INFORMATION

3.1 GENERAL ENVIRONMENTAL INFORMATION

This section provides applicable environmental characteristics for the general region in which the project is located.

3.1.1 REGIONAL ENVIRONMENTAL INFORMATION

The proposed construction site is located in Harris County, Texas within the Gulf Coast Prairies and Marshes ecoregion⁶ and the West Gulf Coastal Plain physiographic province of North America⁷. The area in which the project is located is typical for the Gulf Coast Prairies and Marshes ecoregion.

This region borders the Gulf Coast in the state of Texas. The Gulf Coast influence creates multiple dynamic ecosystems within this eco-region including bays, estuaries, salt marshes, and tidal flats. This region is prime wintering grounds for migratory birds. The bays and estuaries are invaluable breeding grounds and fish hatcheries.

This ecoregion also receives more rainfall than many other ecoregions in Texas. As a result, this region is ecologically diverse inland, as well as immediately adjacent to the coastline. Freshwater wetlands, marshes, and swamps are typical in addition to inland prairies and scrub/shrub habitat⁸.

The Gulf Coast Prairies and Marshes ecoregion spans the Texas coastline. Because of the abundant water resources, the rich soils, and the proximity to the coast, this area is commonly converted to cropland, ranchland, and industrial development⁸.

3.1.2 WATER RESOURCES

Harris County has abundant water resources, with its southeast border on the Gulf of Mexico. Other prominent water features in the area include Hunting Bayou, Buffalo Bayou/Houston Ship Channel, Luce Bayou, Greens Bayou, San Jacinto River, and Trinity and Galveston Bays. The low, flat topography invites freshwater and tidal influence to create a variety of aquatic ecosystems mentioned above.

The watersheds or river basins that contribute to the proposed project area are the San Jacinto River Basin and the Trinity-San Jacinto Coastal Basin.

Galveston Bay and the Trinity-San Jacinto Estuary lie in the warm temperate climatic zone of the upper Texas coast and cover an area of about 600 square miles—the largest of all seven major bay and estuary (tidal) systems in Texas. Although transected by a deep (>45 feet) ship channel, the average depth of the estuary is only 8.5 feet⁹. According to multiple sources including the Texas Parks and Wildlife Department and US Geological Survey (USGS), the Trinity-San Jacinto Estuary and its component waterbodies are tidally-influenced¹⁰.

4.0 AIR QUALITY ANALYSIS RESULTS

Sage Environmental Consulting (Sage), EM's air quality permitting consultant for the project, performed dispersion modeling to predict emissions of air constituents from the proposed expansion project in accordance with air permitting requirements. Dispersion modeling uses mathematical formulations to characterize the atmospheric processes that disperse constituents emitted by a source. This section provides a summary of the results of the dispersion modeling.

Together with air dispersion modeling results, EPA Significant Impact Levels (SILs) were used as a tool to determine the potential for project emissions to adversely affect EFH. SILs are levels set by the EPA, below which, modeled source criteria pollutant impacts would be considered insignificant. The GLCMax value is the maximum ground level concentration predicted by the model for each constituent and averaging period resulting from this project. If a GLCMax value is less than the SIL, the modeled source impacts are considered insignificant and are not considered to cause or contribute to a violation of a National Ambient Air Quality Standards (NAAQS) or PSD Increment for that criteria pollutant and averaging period. If a GLCMax is greater than the SIL, additional analysis is required to demonstrate that the project would not cause or contribute to a violation of the NAAQS or PSD Increment for that constituent and averaging period.

The project GLCMax values are less than the SILs for the following: sulfur dioxide (SO₂), particulate matter (PM)₁₀, annual PM_{2.5}, carbon monoxide (CO), and nitrogen dioxide (NO₂). Accordingly, the proposed project's predicted criteria pollutant emissions are considered insignificant with respect to EFH based on EPA's SIL analysis method with screening levels set to protect sensitive populations.

The project GLCMax value is above the SIL for 24-Hour PM_{2.5}. The dispersion model conducted by Sage predicts concentrations at specific downwind receptor locations for each pollutant and averaging period. The coordinates of each receptor with modeled concentrations greater than the SIL for each pollutant were plotted to delineate the area of significant impact (AOI). The farthest distance in any direction from the center of BOP to concentrations above the SIL was determined to be approximately 1.3 miles. Designated EFH was not identified within the AOI.

Table 1 shows the maximum predicted concentrations from the expansion project for each constituent and averaging period. Table 1(a) (Appendix C) is the Emission Point Summary

provided in the application that EM submitted to the TCEQ for a permit to authorize non-GHG emissions from the project⁴.

Table 1. Maximum Predicted Criteria Pollutant Concentrations¹¹

Pollutant	Standard	Averaging Period	Project GLCmax ¹ (µg/m ³)	SIL (µg/m ³)	Less Than SIL?
NO ₂	NAAQS	1-hour	7.4	7.5	Yes
		Annual	0.5	1	Yes
CO	NAAQS	1-hour	683.2	2000	Yes
		8-hour	424.8	500	Yes
PM ₁₀	NAAQS	24-hour	3.1	5	Yes
PM _{2.5}	NAAQS	24-hour	2.2	1.2	No
		Annual	0.2	0.3	Yes
SO ₂	NAAQS	1-hour	0.7	7.8	Yes
		3-hour	5.8	25	Yes
		24-hour	1.9	5	Yes
		Annual	<0.1	1	Yes

1 - The GLCmax is the maximum concentration predicted for each constituent and averaging period.

In addition to the air quality analysis performed for criteria pollutants; Sage evaluated the other (non-criteria) pollutants that will be emitted by the proposed project. This evaluation was performed in accordance with TCEQ air permitting guidelines for assessing non-criteria pollutants. The predicted concentrations were compared with TCEQ Effects Screening Levels (ESLs)¹².

The specific results of the evaluation for other (non-criteria) pollutants that will be emitted by the proposed project are provided in Table 2. With the conservatively-predicted concentrations of routine emissions and MSS emissions being below TCEQ ESLs, the predicted concentrations are acceptable in that they are not expected to cause or contribute to adverse human health or welfare effects. No measurable amounts of mercury or other heavy metals will be emitted by the ethylene production unit project.

Table 2. Non-Criteria Pollutant Modeling Results¹¹

Compound	Averaging Period	Model Results		
		ESL/State Property Line (µg/m ³)	Project GLCmax (µg/m ³)	ESL %
Ammonia	1-Hour	170	149.5	88
Benzene	1-Hour	170	14.8	8.7
Ethylene	1-Hour	1,400	886.3	63.3
1,3-Butadiene	1-Hour	510	8.7	1.7
1-Butene	1-Hour	820	2.3	<1
Butane	1-Hour	23,750	1.5	<1
n-Pentane	1-Hour	4,100	4.9	<1
Ethyl Benzene	1-Hour	740	6.3	<1
Toluene	1-Hour	640	7.5	1.2
Xylene	1-Hour	350	6.3	1.8
Napthalene	1-Hour	440	6.3	1.4
Isopropyl Benzene	1-Hour	500	3.1	<1
n-Hexane	1-Hour	5,300	3.1	<1
Acetylene	1-Hour	26,600	492.4	1.9
Light VOC	1-Hour	3,500	991.8	28.3
Heavy VOC	1-Hour	1,000	28.4	2.8

5.0 EFFECTS OF THE PROPOSED ACTION ON EFH

This section presents the results of the analysis of potential adverse effects on federally-managed EFH as a result of the proposed expansion project.

5.1 EFH

The proposed ethylene production unit project includes an existing wastewater outfall structure that discharges into the HSC, which is tidally-influenced. According to the EPA, designated EFH within the Gulf of Mexico FMC includes all tidally-influenced aquatic habitats. Therefore, the tidally-influenced HSC is designated EFH. The Project Area, existing wastewater outfall location, and EFH are identified in Figure 2 (Appendix A). The HSC and its tidal tributaries (Ecoregion 4) have been identified as EFH by the Gulf of Mexico FMC for all life stages of red

drum (*Sciaenops ocellatus*), shrimp (4 species), coastal migratory pelagics (3 species), and reef fish (43 species)¹³.

Furthermore, these tidally influenced areas have also been identified by NMFS to contain EFH for neonate/young of the year scalloped hammerhead sharks (*Sphyrna lewini*); neonate/young of the year and juvenile blacktip sharks (*Carcharhinus limbatus*) and bull sharks (*Carcharhinus leucas*); and neonate/young of the year and adult Atlantic sharpnose sharks (*Rhizoprionodon terraenovae*) and bonnethead sharks (*Sphyrna tiburo*)¹⁴.

5.2 HABITAT AREAS OF PARTICULAR CONCERN

There are no EFH Habitat Areas of Particular Concern near the proposed project wastewater outfall location¹⁵.

5.3 POTENTIAL LAND-BASED EFFECTS ON EFH

No construction or maintenance activities will take place within EFH. Designated EFH will not be adversely affected by construction or maintenance activities associated with the proposed expansion project.

5.4 POTENTIAL EFFECTS ON EFH THROUGH DEPOSITION OF AIR POLLUTANTS

Since SILs are concentrations that represent thresholds of insignificant modeled source impacts, the pollutant concentrations predicted to be less than or equal to the SILs are expected to have no significant impact on flora or fauna. The project GLCMax values are less than the SILs for the following: sulfur dioxide (SO₂), particulate matter (PM)₁₀, annual PM_{2.5}, carbon monoxide (CO), and nitrogen dioxide (NO₂). Accordingly, the proposed project's predicted criteria pollutant emissions are considered insignificant with respect to EFH based on EPA's SIL analysis method with screening levels set to protect sensitive populations.

The project GLCmax value is above the SIL for 24-Hour PM_{2.5}. The farthest distance in any direction from the project emissions sources to concentrations above the SIL was determined to be approximately 1.3 miles. Designated EFH was not identified within the AOI. All pollutants will reach ambient levels before reaching EFH.

With the conservatively-predicted concentrations of routine emissions and MSS emissions being below TCEQ ESLs, the predicted non-criteria pollutant concentrations are acceptable in that they are not expected to cause or contribute to adverse human health or welfare effects. No measurable amounts of mercury or other heavy metals will be emitted by the ethylene production unit project.

No potential adverse effects to EFH are anticipated as a result of air emissions (criteria and non-criteria pollutants) from the expansion project.

5.5 POTENTIAL EFFECTS OF STORM WATER EFFLUENT WITHIN EFH

Non-contact storm water is collected in a ditch system called the Nonprocess Area Storm Water Collection System during construction and operation. Prior to discharge, the water is visually inspected to ascertain if it is acceptable for discharge. Water that does not pass inspection is pumped to the BOP Retention Basin directly or via the Contaminated Sewer System. Per the TPDES permit, discharge from the outfall is sampled and monitored. Non-contact storm water will be discharged through Outfall 002 into Goose Creek. Goose Creek does not contain designated EFH until approximately 1.3 miles downstream of Outfall 002. No adverse effects to EFH are anticipated as a result of non-contact storm water from the proposed project.

5.6 POTENTIAL EFFECTS OF INCREASED WASTEWATER EFFLUENT WITHIN EFH

The existing TPDES permit authorizes treated wastewater and contact storm water discharges from the BOP from Outfall 001 into the HSC (San Jacinto Tidal) adjacent to the Fred Hartman Bridge. It is estimated that there will be a net 8% decrease (21.3 MGD to 19.6 MGD) of discharged wastewater at Outfall 001 as a result of the proposed expansion project. The expansion project's wastewater effluent discharge will be an estimated 1.1 MGD. This proposed increase will be offset by rerouting an existing 2.8 MGD of demineralizer plant regenerate water to another existing outfall with existing TPDES authorization. The demineralizer plant regenerate water is not associated with the proposed expansion project. The proposed project wastewater effluent is not expected to be significantly or demonstrably different (i.e., temperature or pollutant concentrations) than wastewater currently generated by operations at the BOP. Table 3 summarizes the estimated project impact from the project on Refinery Wastewater Outfall 001.

Table 3. Estimated Project Wastewater Effluent Concentrations¹⁶

Pollutant	2012 Sample Concentrations (mg/l)	Estimated Project Wastewater Effluent Concentration (mg/l)
BOD (5-day)	19.8	19.8
CBOD (5-day)	12.0	12.0
Chemical Oxygen Demand	160	160
Total Organic Carbon	23.3	23.3
Dissolved Oxygen	7.55	7.55
Ammonia Nitrogen	1.9	1.9
Total Suspended Solids	46.3	46.3
Nitrate Nitrogen	0.22	0.22
Total Organic Nitrogen	4.5	4.5
Total Phosphorus	0.73	0.73
Oil and Grease	< 2.4	< 2.4
Total Residual Chlorine	0.06	0.06
Total Dissolved Solids	1900	1900
Sulfate	1405	1405
Chloride	283	283
Fluoride	0.3	0.3
Fecal Coliform	15	15
Temperature (°F)	75.4	75.4
pH (Standard Units; min/max)	7.5	7.5
Total Aluminum	102.5	102.5
Total Antimony	6.6*	6.6*
Total Arsenic	6.2*	6.2*
Total Barium	110	110
Total Beryllium	< 1.3	< 1.3
Total Cadmium	0.66	0.66
Total Chromium	< 10	< 10
Trivalent Chromium	< 10	< 10
Hexavalent Chromium	< 10	< 10
Total Copper	3.3*	3.3*
Cyanide	4.1*	4.1*
Total Lead	< 2.9	< 2.9
Total Mercury	0.028*	0.028*
Total Nickel	12.5	12.5

Total Selenium	16.8	16.8
Total Silver	< 1.3	< 1.3
Total Thallium	5.9	5.9
Total Zinc	12.4	12.4
Benzene	< 2.1	< 2.1
Benzidene	< 3.9	< 3.9
Benzo(a)anthracene	< 0.71	< 0.71
Benzo(a)pyrene	< 0.64	< 0.64
Carbon Tetrachloride	< 2.8	< 2.8
Chlorobenzene	< 1.5	< 1.5
Chloroform	< 2.7	< 2.7
Chrysene	< 0.81	< 0.81
Cresols	< 1.3	< 1.3
Dibromochloromethane	< 1.7	< 1.7
1,2-Dibromoethane	< 1.1	< 1.1
1,4-Dichlorobenzene	< 1.3	< 1.3
1,2-Dichloroethane	< 2.4	< 2.4
1,1-Dichloroethylene	< 2.2	< 2.2
Fluoride	420	420
Hexachlorobenzene	< 1.1	< 1.1
Hexachlorobutadiene	< 1.4	< 1.4
Hexachloroethane	< 1.6	< 1.6
Methyl Ethyl Ketone	< 2.1	< 2.1
Nitrobenzene	< 1.8	< 1.8
n-Nitrosodiethylamine	< 1.8	< 1.8
n-Nitroso-di-n-Butylamine	< 1.4	< 1.4
PCB's, Total	< 0.060	< 0.060
Pentachlorobenzene	< 0.65	< 0.65
Pentachlorophenol	< 1.1	< 1.1
Phenanthrene	< 0.97	< 0.97
Pyridine	< 1.9	< 1.9
1,2,4,5-Tetrachlorobenzene	< 1.2	< 1.2
Tetrachloroethylene	< 1.7	< 1.7
Trichloroethylene	< 2.1	< 2.1
1,1,1-Trichloroethane	< 2.6	< 2.6
2,4,5-Trichlorophenol	< 1.5	< 1.5
TTHM (Total Trihalmethanes)	< 0.63	< 0.63

Vinyl Chloride	< 2.5	< 2.5
* Estimated value.		

The TCEQ Surface Water Monitoring Information System database was used to obtain water quality data from monitoring station 13340 (Black Duck Bay; Segment 2428), which is the closest station to Outfall 001. Data from this station is provided in Table 4. The effluent concentrations listed in Table 3 would not significantly alter ambient water quality concentrations listed in Table 4.

Table 4. TCEQ Water Quality Monitoring Data Summary for Monitoring Station 13340 (Watershed Black Duck Bay; Segment 2428)¹⁶

Parameter	Sample Concentrations and Values*	Estimated Post-project Sample Concentrations and Values
Temperature (°F)	72.7	≤72.7
Dissolved Oxygen	10.6	≤10.6
pH	8.5	≤8.5
Specific Conductance	19606	≤19606
Salinity	11.78	≤11.78
Secchi Transparency	0.41	≤0.41
Enterococci	59	≤59
Ammonia-N	0.07	≤0.07
Orthophosphate-P	0.14	≤0.14
Nitrate-N	0.17	≤0.17
Total Phosphorus	0.28	≤0.28
Chlorophyll a	26.8	≤26.8
Total Organic Carbon	8.3	≤8.3
Salts/Total	11731	≤11731
Total Suspended Solids	22	≤22
Total Hardness	2255.2	≤2255.2
*TCEQ sampling period 07/22/2004 through 04/20/2010.		

Dilution calculations were performed to help demonstrate compliance with TCEQ and EPA standards for aquatic life protection. These calculations were performed in accordance with the TCEQ Guidance document *Procedures to Implement the Texas Surface Water Quality Standards¹⁷*, which was approved by the EPA November 22, 2002. The analysis was used to estimate the

concentration of pollutants at various distances from the point of discharge to the San Jacinto Tidal. Effluent concentration limits for specific toxic materials were calculated for acute and chronic numerical toxic criteria, as appropriate, using an effluent fraction that represents critical mixing conditions. Critical conditions for discharges to estuaries and tidal rivers, such as the San Jacinto Tidal, were estimated using the horizontal Jet Plume equation¹⁸.

The effluent reaches 6% dilution at the edge of the human health mixing zone at an approximately 400-foot radius from the point of discharge. This effluent percentage has been determined by the TCEQ to be protective of aquatic life and human health and in compliance with the Texas Surface Water Quality Standards¹⁹.

TCEQ determined that discharge from Outfall 001 may contain pollutants that have the potential to cause toxic conditions in the receiving stream. Per the permit conditions, whole effluent biomonitoring is required.

For Outfall 001's 7-day chronic toxicity testing, there has been no lethal or sublethal test failures reported in the last five years for the mysid shrimp (*Mysidopsis bahia*) or inland silverside (*Menidia beryllina*). Results from the 24-hour acute toxicity test showed no demonstrations of significant mortality reported in the last five years for the mysid shrimp or inland silverside. In addition, discharge monitoring did not indicate a violation of any numerical water quality-based effluent limitation for aquatic life protection or for human health. The effluent does not appear to have lethal or sublethal effects on the indicator species.

Based on the above information, no potential adverse effects to EFH are anticipated as a result of the proposed wastewater effluent from the ethylene production unit project.

5.7 POTENTIAL EFFECTS OF INCREASED MARINE VESSEL TRAFFIC WITHIN EFH

Operation of the proposed expansion project would not result in an increase in marine vessel traffic within the HSC. No potential adverse effects to EFH are anticipated as a result of marine vessel traffic from the expansion project.

6.0 CONCLUSIONS

EFH was identified within the HSC at the point of discharge for the existing BOP wastewater outfall structure (Outfall 001). No EFH was identified within Goose Creek at the point of discharge for the existing BOP non-contact storm water outfall structure (Outfall 002).

As described above in Section 5.0, EFH would not be adversely affected by construction or maintenance activities, stormwater, wastewater, air emissions, or marine vessel traffic resulting from the proposed expansion project.

7.0 REFERENCES

- ¹ ExxonMobil. ExxonMobil Baytown Area Fact Sheet. http://www.exxonmobil.com/NA-English/files/Baytown_Area_Fact_Sheet.pdf
- ² National Oceanic and Atmospheric Administration Fisheries Feature. Magnuson-Stevens Fishery Conservation and Management Act Reauthorized. <http://www.nmfs.noaa.gov/msa2005/>
- ³ Federal Register. 2006. Fisheries of the Caribbean, Gulf of Mexico, and South Atlantic; Gulf of Mexico Recreational Grouper Fishery Management Measures. <https://www.federalregister.gov/articles/2006/11/17/E6-19481/fisheries-of-the-caribbean-gulf-of-mexico-and-south-atlantic-gulf-of-mexico-recreational-grouper>
- ⁴ Sage Environmental Consulting. 2012. New Source Review Permit Application for Ethylene Expansion Project. Prepared for ExxonMobil Chemical Company. Baytown, TX.
- ⁵ U.S. Corps of Army Engineers. Houston Ship Channel. Accessed 14 May 2013. [http://www.swd.usace.army.mil/Portals/42/docs/civilworks/Fact%20Sheets/Galveston/FY13%20Houston%20Ship%20Channel,%20TX%20\(OM\).pdf](http://www.swd.usace.army.mil/Portals/42/docs/civilworks/Fact%20Sheets/Galveston/FY13%20Houston%20Ship%20Channel,%20TX%20(OM).pdf)
- ⁶ Texas Parks and Wildlife Department. Level IV Eco-regions of Texas. http://www.epa.gov/wed/pages/ecoregions/tx_eco.htm
- ⁷ US Geological Survey. Physiographic Regions of the Lower 48 United States. <http://tapestry.usgs.gov/physiogr/physio.html>
- ⁸ Environmental Protection Agency. Ecoregions of Texas. ftp://ftp.epa.gov/wed/ecoregions/tx/TXeco_Jan08_v8_Cmprsd.pdf
- ⁹ Powell, Gary and Ruben Solis. Changes In Freshwater Inflows to Galveston Bay and the Trinity-San Jacinto Estuary, Texas. Texas Water Development Board. Accessed November 2, 2012. http://gbic.tamug.edu/gbeppubs/T1/gbnepT1_11-12.pdf
- ¹⁰ Center for Research in Water Resources. Trinity-San Jacinto Coastal Basin: ArcGIS Hydro Data Model. Accessed November 2, 2012. <http://www.crrw.utexas.edu/gis/gishydro00/ArcGIS/Chapter10/chapter10.pdf>
- ¹¹ Sage Environmental Consulting. 2013. Section 2-Constituents Evaluated, Types of Modeling, and Modeling Methodology.
- ¹² Texas Commission on Environmental Quality. Download Effects Screening Levels (ESL) Lists

Used in the Review of Air Permitting Data.

<http://www.tceq.state.tx.us/implementation/tox/esl/list>

- ¹³Gulf of Mexico Fishery Management Council. 2004. Final environmental impact statement for the generic amendment to the following fishery management plans of the Gulf of Mexico: Shrimp Fishery of the Gulf of Mexico, United States Waters; Red Drum Fishery of the Gulf of Mexico; Reef Fish Fishery of the Gulf of Mexico; Coastal Migratory Pelagic Resources (Mackerels) in the Gulf of Mexico and South Atlantic; Stone Crab Fishery of the Gulf of Mexico; Spiny Lobster in the Gulf of Mexico and South Atlantic; Coral and Coral Reefs of the Gulf of Mexico. Gulf of Mexico Fishery Management Council. Tampa, FL.
- ¹⁴NMFS. 2009. Final Amendment 1 to the 2006 Consolidated Atlantic Highly Migratory Species Fishery Management Plan, Essential Fish Habitat. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Office of Sustainable Fisheries, Highly Migratory Species Management Division, Silver Spring, MD. Public Document. pp. 395.
- ¹⁵ National Oceanic and Atmospheric Administration. Essential Fish Habitat Mapper Verion 3.0. Accessed November 2, 2012.
<http://www.habitat.noaa.gov/protection/efh/habitatmapper.html>
- ¹⁶ Raven Environmental Services, Inc. and Sage Environmental Consulting, LP. Biological Assessment for the Baytown Olefins Plant Ethylene Expansion Unit Project.
- ¹⁷ TCEQ, January 2003, *Procedures to Implement the Texas Surface Water Quality Standards*, RG-194, Water Quality Division, Austin, Texas, pp. 39-43.
- ¹⁸ Fischer, H.B., List, E.J., Koh, R.C.Y., Imberger, J. and Brooks, N.H., 1979, *Mixing in Inland and Marine Waters*, Academic Press, San Diego, pp. 328-329.
- ¹⁹ TCEQ, January 2003, *Procedures to Implement the Texas Surface Water Quality Standards*, RG-194, Water Quality Division, Austin, Texas, pp. 39-43.

8.0 LIST OF PREPARERS

Jayne A. Shiner, Senior Ecologist

PWS, B.S. General Biology

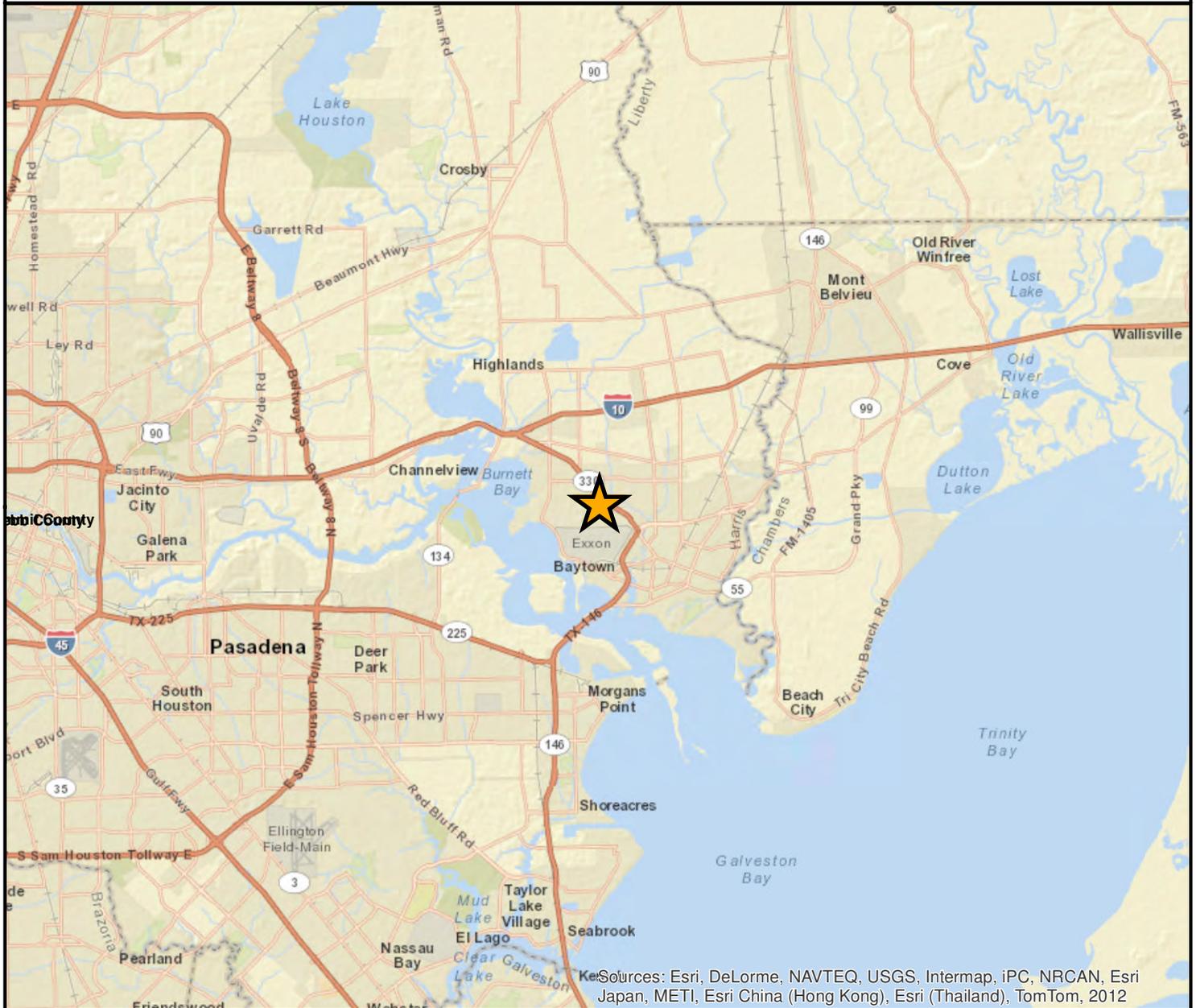
Debbie A. Scott, Environmental Scientist

AWB, M.S., Wildlife Biology

APPENDIX A

FIGURES

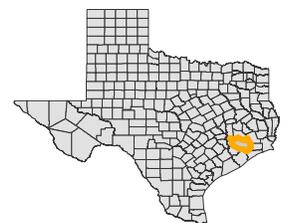
Figure 1 Project Location Baytown Olefins Plant Ethylene Expansion Unit Project Essential Fish Habitat Assessment Harris County, Texas



Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2012



★ Project Location



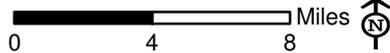
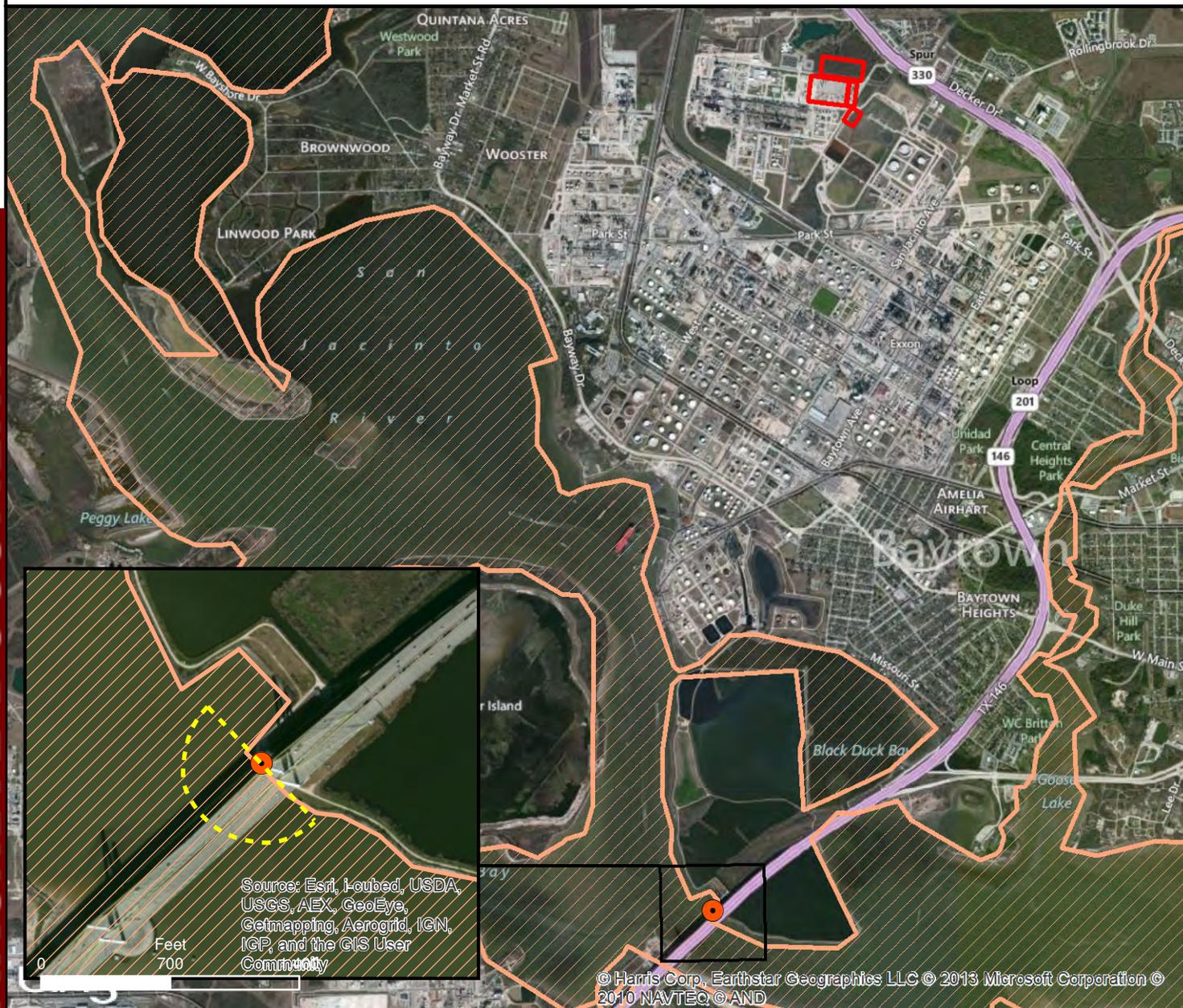
Background Resources: ESRI USA Roads Basemap		Project Number and Information: 1334 Baytown Olefins Plant Ethylene Expansion Unit Project Essential Fish Habitat Assessment	 3413 Hunter Road San Marcos Texas 78666 
GPS and Coordinate Type: Trimble Geo XH 6000 Series UTM NAD 1983 Zone 15 North	Map Created: 5/15/2013 by D. Scott		

Figure 2
Essential Fish Habitat
Baytown Olefins Plant Ethylene Expansion Unit Project
Harris County, Texas



Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

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Human Health Mixing Zone
 (~400-Foot Radius)



Essential Fish Habitat



Project Area



Outfall 001

Background Resources:

ESRI Aerial Basemaps

GPS and Coordinate Type:
 Trimble Geo XH 6000 Series
 UTM NAD 1983
 Zone 15 North

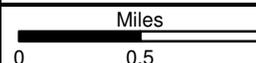
Map Created:
 5/18/2013 by JAS

Project Number and Information:

1334
 Baytown Olefins Ethylene
 Expansion Unit Project
 Essential Fish Habitat Assessment



3413 Hunter Road San Marcos Texas 78666



APPENDIX B
PHOTOGRAPHIC LOG

Baytown Olefins Plant Ethylene Expansion Unit Project

5/16/2013

Harris County, Texas

View: Northeast view below the weir. Discharge water flows from the Outfall 001 weir in a closed underground pipe, which discharges in the Houston Ship Channel.



Baytown Olefins Plant Ethylene Expansion Unit Project

5/16/2013

Harris County, Texas

View: Northeast view of the Outfall 001 weir.



Baytown Olefins Plant Ethylene Expansion Unit Project

5/16/2013

Harris County, Texas

View: Southwest view of the Houston Ship Channel.



Baytown Olefins Plant Ethylene
Expansion Unit Project

5/16/2013

Harris County, Texas

View: View of the water discharge
over the Outfall 001 weir.



Baytown Olefins Plant Ethylene
Expansion Unit Project

5/16/2013

Harris County, Texas

View: Southwest view of Outfall 001
into the Houston Ship Channel.



Baytown Olefins Plant Ethylene
Expansion Unit Project

5/16/2013

Harris County, Texas

View: West view of Houston Ship
Channel adjacent to Outfall 001.



APPENDIX C

TABLE 1(A)



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Table 1(a) Emission Point Summary

Permit Number:	102982	Account ID Number:	HG-0228-H	Date:	April 2013	
Permit Type:	<input type="checkbox"/> Permit	<input type="checkbox"/> Flexible Permit	<input type="checkbox"/> Standard Permit	<input type="checkbox"/> Prevention of Significant Deterioration	<input type="checkbox"/> Nonattainment	<input type="checkbox"/> Hazardous Pollutants [FCAA §112(g)]
Action Type:	<input checked="" type="checkbox"/> New Permit	<input type="checkbox"/> Amendment	<input type="checkbox"/> Major Modification	<input type="checkbox"/> Renewal	<input type="checkbox"/> Alteration	<input type="checkbox"/> Other:

Review of applications and issuance of permits will be expedited by supplying all necessary information requested on this Table.

AIR CONTAMINANT DATA						EMISSION POINT DISCHARGE PARAMETERS													
1. Emission Point			2. Component or Air Contaminant Name	3. Air Contaminant Emission Rate		4. UTM Coordinates of Emission Point			Source				7. Fugitives						
EPN (A)	FIN (B)	NAME (C)		Pounds per Hour (A)	TPY (B)	Zone	East (Meters)	North (Meters)	5. Height Above Ground (ft)	6. Stack Exit Data		7. Fugitives							
									Diameter (ft) (A)	Velocity (fps) (B)	Temperature (°F) (C)	Length (ft) (A)	Width (ft) (B)	Axis Degrees (C)	E/W of North (D)				
XXAF01-ST through XXHF01-ST	XXAF01 through XXHF01 ⁽⁴⁾	Furnace Compliance Cap	NO _x	44.56	155.58														
			SO ₂	1.30	5.16														
			CO	1,730.67	609.49														
			PM/PM ₁₀ /PM _{2.5} ^(A)	16.53	65.31														
			NH ₃	39.40	74.01														
			H ₂ SO ₄	0.10	0.39														
XXAF01-ST through XXHF01-ST	XXAF01 through XXHF01 ⁽⁴⁾	Hourly Intermittent Furnace Compliance Cap	VOC	11.96	47.26														
			NO _x	44.56	(B)														
			SO ₂	2.47	(B)														
			CO	2,609.78	(B)														
			PM/PM ₁₀ /PM _{2.5} ^(A)	16.53	(B)														
			NH ₃	47.54	(B)														
			H ₂ SO ₄	0.19	(B)														
			VOC	22.66	(B)														
XXAF01-ST	XXAF01	XXA Furnace Combustion Vent	(C)	(D)	(E)	15	306062	3293339	230	9.83	30.00	325							
XXBF01-ST	XXBF01	XXB Furnace Combustion Vent	(C)	(D)	(E)	15	306065	3293355	230	9.83	30.00	325							
XXCF01-ST	XXCF01	XXC Furnace Combustion Vent	(C)	(D)	(E)	15	306069	3293373	230	9.83	30.00	325							
XXDF01-ST	XXDF01	XXD Furnace Combustion Vent	(C)	(D)	(E)	15	306072	3293390	230	9.83	30.00	325							
XXEF01-ST	XXEF01	XXE Furnace Combustion Vent	(C)	(D)	(E)	15	306075	3293411	230	9.83	30.00	325							
XXFF01-ST	XXFF01	XXF Furnace Combustion Vent	(C)	(D)	(E)	15	306079	3293428	230	9.83	30.00	325							
XXGF01-ST	XXGF01	XXG Furnace Combustion Vent	(C)	(D)	(E)	15	306081	3293445	230	9.83	30.00	325							
XXHF01-ST	XXHF01	XXH Furnace Combustion Vent	(C)	(D)	(E)	15	306084	3293462	230	9.83	30.00	325							
XXAB-DEC	XXABDEC	XXA/B Furnace Decoke Vent	CO	315.38	31.54	15	306063	3293346	212	3.00	150.47	500							
			PM _{2.5}	19.84	1.98														
			PM ₁₀	22.92	2.29														
XXCD-DEC	XXCDDEC	XXC/D Furnace Decoke Vent	PM	26.56	2.66														
			CO	315.38	31.54	15	306070	3293381	212	3.00	150.47	500							
			PM _{2.5}	19.84	1.98														
			PM ₁₀	22.92	2.29														
			PM	26.56	2.66														
XXEF-DEC	XXEFDEC	XXE/F Furnace Decoke Vent	CO	315.38	31.54	15	306077	3293420	212	3.00	150.47	500							
			PM _{2.5}	19.84	1.98														
			PM ₁₀	22.92	2.29														
			PM	26.56	2.66														

US EPA ARCHIVE DOCUMENT



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Table 1(a) Emission Point Summary

Permit Number:	102982	Account ID Number:	HG-0228-H	Date:	April 2013	
Permit Type:	<input type="checkbox"/> Permit	<input type="checkbox"/> Flexible Permit	<input type="checkbox"/> Standard Permit	<input type="checkbox"/> Prevention of Significant Deterioration	<input type="checkbox"/> Nonattainment	<input type="checkbox"/> Hazardous Pollutants [FCAA §112(g)]
Action Type:	<input checked="" type="checkbox"/> New Permit	<input type="checkbox"/> Amendment	<input type="checkbox"/> Major Modification	<input type="checkbox"/> Renewal	<input type="checkbox"/> Alteration	<input type="checkbox"/> Other:

Review of applications and issuance of permits will be expedited by supplying all necessary information requested on this Table.

AIR CONTAMINANT DATA						EMISSION POINT DISCHARGE PARAMETERS										
1. Emission Point			2. Component or Air Contaminant Name	3. Air Contaminant Emission Rate		4. UTM Coordinates of Emission Point			Source				7. Fugitives			
EPN (A)	FIN (B)	NAME (C)		Pounds per Hour (A)	TPY (B)	Zone	East (Meters)	North (Meters)	5. Height Above Ground (ft)	6. Stack Exit Data		7. Fugitives				
									Diameter (ft) (A)	Velocity (fps) (B)	Temperature (°F) (C)	Length (ft) (A)	Width (ft) (B)	Axis Degrees (C)	E/W of North (D)	
XXGH-DEC	XXGHDEC	XXG/H Furnace Decoke Vent	CO	315.38	31.54	15	306083	3293453	212	3.00	150.47	500				
			PM _{2.5}	19.84	1.98											
			PM ₁₀	22.92	2.29											
			PM	26.56	2.66											
FLAREXX1 FLAREXX2	FLAREXX1 FLAREXX2 BOPXXAREA etc. ^(f)	BOP-XX Flare System Cap	NO _x	22.24	75.54											
			SO ₂	7.97	17.27											
			CO	160.64	193.78											
			VOC	371.90	104.59											
FLAREXX1 FLAREXX2	FLAREXX1 FLAREXX2 BOPXXAREA etc. ^(f)	BOP-XX Flare System Intermittent Cap	NO _x	2,309.32	(F)											
			SO ₂	233.32	(F)											
			CO	3,742.46	(F)											
			VOC	3,991.46	(F)											
FLAREXX1	FLAREXX1	Elevated Flare	(G)	(H)	(F)	15	306137	3293214	270	15.48	65.60	1832				
FLAREXX2	FLAREXX2	Multi-Point Ground Flare	(G)	(H)	(F)	15	306137	3293214	10	87.14	65.60	1832				
BOPXXCT	BOPXXCT	BOP-XX Cooling Tower	PM _{2.5}	< 0.01	0.02	15	306010	3293608	50	30.00	29.00	Ambient				
			PM ₁₀	0.89	3.92											
			PM	3.29	14.43											
BOPXXFUG	BOPXXAREA	BOP-XX Fugitives	VOC	78.06	34.19											
			NH ₃	2.00	8.76											
ACETCONVXX	ACETCONVXX	Acetylene Converter Regeneration Vent	CO	3.80	0.23	15	305954	3293438	70	1.50	12.00	120				
			VOC	19.00	1.69											
XXZTK05	XXZTK05	Equalization Tank	VOC	0.11	0.44	15	305955	3293470	40	0.00	0.00	Ambient				
XXZTK11	XXZTK11	Compressor Wash Oil Tank	VOC	0.50	1.13	15	305954	3293438	10	0.00	0.00	Ambient				
XXZTK16	XXZTK16	Emergency Generator Diesel Storage Tank 1	VOC	0.03	0.06	15	305786	3293636	10	0.00	0.00	Ambient				
XXZTK17	XXZTK17	Emergency Generator Diesel Storage Tank 2	VOC	0.03	0.06	15	305786	3293636	10	0.00	0.00	Ambient				
XXZTK18	XXZTK18	Emergency Generator Diesel Storage Tank 3	VOC	0.03	0.06	15	305786	3293636	10	0.00	0.00	Ambient				
XXZTK19	XXZTK19	Firewater Pump Diesel Storage Tank 1	VOC	0.03	0.06	15	305786	3293636	10	0.00	0.00	Ambient				

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Action Type:	<input checked="" type="checkbox"/> New Permit	<input type="checkbox"/> Amendment	<input type="checkbox"/> Major Modification	<input type="checkbox"/> Renewal	<input type="checkbox"/> Alteration	<input type="checkbox"/> Other:

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AIR CONTAMINANT DATA						EMISSION POINT DISCHARGE PARAMETERS												
1. Emission Point			2. Component or Air Contaminant Name	3. Air Contaminant Emission Rate		4. UTM Coordinates of Emission Point			6. Stack Exit Data				7. Fugitives					
EPN (A)	FIN (B)	NAME (C)		Pounds per Hour (A)	TPY (B)	Zone	East (Meters)	North (Meters)	5. Height Above Ground (ft)	Diameter (ft) (A)	Velocity (fps) (B)	Temperature (°F) (C)	Length (ft) (A)	Width (ft) (B)	Axis Degrees (C)	E/W of North (D)		
XXZLTK20	XXZLTK20	Firewater Pump Diesel Storage Tank 2	VOC	0.03	0.06	15	305786	3293636	10	0.00	0.00	Ambient						
DIESELXX01 DIESELXX02 DIESELXX03	DIESELXX01 DIESELXX02 DIESELXX03	Backup Generator Engines	NO _x	52.30	2.61	15	305786	3293636	10	0.60	225.00	400						
			SO ₂	0.03	< 0.01													
			CO	22.13	1.11													
			PM/PM ₁₀ /PM _{2.5} ^(A)	2.82	0.14													
DIESELXXFW1 DIESELXXFW2	DIESELXXFW1 DIESELXXFW2	Firewater Booster Pump Engines	VOC	2.84	0.14													
			NO _x	37.20	1.86	15	305786	3293636	10	0.60	147.00	400						
			SO ₂	0.71	0.04													
			CO	8.02	0.40													
			PM/PM ₁₀ /PM _{2.5} ^(A)	0.87	0.04													
			VOC	25.91	1.30													

Note: Total VOC is defined in accordance with 30 TAC §101.1(115).

- (A) All particulate matter is assumed equal to PM₁₀ and PM_{2.5}.
- (B) Annual furnace intermittent emissions will be managed under the annual Furnace Compliance Cap.
- (C) See Furnace Compliance Cap and Hourly Intermittent Furnace Compliance Cap.
- (D) See hourly Furnace Compliance Cap and Hourly Intermittent Furnace Compliance Cap.
- (E) See annual Furnace Compliance Cap.
- (F) See annual BOP-XX Flare System Cap.
- (G) See BOP-XX Flare System Cap and BOP-XX Flare System Intermittent Cap.
- (H) See hourly BOP-XX Flare System Cap and hourly BOP-XX Flare System Intermittent Cap.
- (I) Storage tanks/vessels/drums XXZD10, XXZD12, XXZTK01, XXZTK02, XXZTK03, XXZTK04, XXZTK05, XXZTK06 and XXZTK11 might be routed to the furnace fire box and/or flares.
- (J) Allowable emissions for planned MSS activities associated with the facilities authorized by this permit are contained in Permit No. 3452, unless specified otherwise in this permit.